REMY Robotics

3D Reconstruction Test Task

You are asked to reconstruct a 3D model from images of a cup taken on Intel RealSense D435.
In the archive you will find the following files:

- **`depth-XXXXX.png`** – depth map, single channel, 2 bytes per channel, pixel value equals distance in mm to the corresponding 3D point
- **`ir1-XXXXX.png`** – images from the 1st IR camera
- **`ir2-XXXXX.png`** – images from the 2nd IR camera
- **`rgb-XXXXX.png`** – RGB images
- **`scanner.log`** – each line contains XXXXX number, timestamp since the epoch, XYZ coordinates in mm, and rotation vector of the camera

A rotation vector means a vector defining an axis around which rotation will take place. Rotation angle (in radians) equals a norm of the vector.

You can use the following calibration matrix:

```
[[ 613.688,     0.0, 323.035 ],
 [     0.0, 614.261, 242.229 ],
 [     0.0,     0.0,     1.0 ]]
```